

A White Paper
Presented By:

Integrated Solutions
FOR WIRELESS, MOBILITY & RFID

Go Green And Save Green With Mobile Field Service



**Mobile technologies can positively impact the environment
as well as the bottom line of your field organization.**

By Ken Congdon, Editor In Chief, *Integrated Solutions Magazine*

Sponsored By:



**Go Green And Save Green
With Mobile Field Service**



Introduction

Over the past few years, businesses have been engaged in a “green revolution.” Driven by increased awareness and societal pressures, businesses of all sizes have been adopting enterprisewide initiatives to reduce their impact on the environment. These initiatives go well beyond corporate recycling and power conservation programs. On the contrary, many businesses have been actively investing in new technologies to leverage their resources more effectively and reduce their carbon footprints. This has been particularly true in organizations with field service divisions. These businesses have been trailblazers in the green movement, investing in technology to streamline the effectiveness of, and reduce the waste associated with, their mobile workforces.

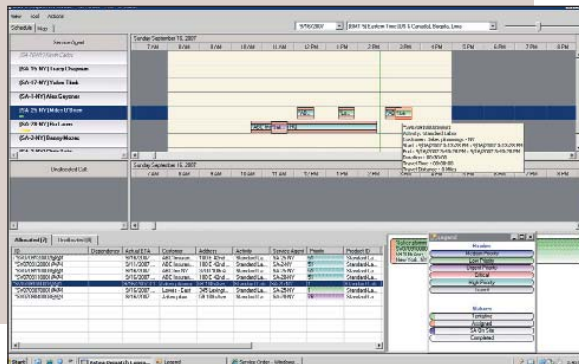
While corporate-funded green initiatives were all the rage as we entered 2009, the economic recession has caused many companies to put their green strategies on hold. While businesses haven’t lost their desire to be more environmentally friendly, they can no longer justify the cost of becoming “more green” in

this troubled economy. Perhaps you are one of these companies. If you are, maybe the reason you can’t justify an investment in green technology is because you are only looking at the environmental advantages of deploying the solution. When it comes to mobile field service, many of the technologies you would deploy to become more green can also produce a quick and dramatic ROI for your business. The following pages outline the green benefits *and* the economic benefits of many of today’s mobile field service technologies. Once you see how investing in greener field service technologies can also put more cash in your coffers, you may find the justification you need to revive your green initiatives.

Real-Time Scheduling Software

Many field service organizations rely on ERP (enterprise resource planning) or CRM (customer relationship management) systems alone to manage their daily appointment schedules. While necessary components in a service organization, these systems are only data processing mechanisms. In some cases,

Go Green And Save Green With Mobile Field Service



these systems generate paper work orders that are provided to field technicians at the beginning of their shifts. In others, field technicians can download their daily appointment schedules from these systems onto a mobile device. In either case, the ability for the field organization to respond to real-time requests and emergencies is limited.

Real-time scheduling software takes service management a step further. This technology can allow an organization to effectively dispatch field technicians to service calls in real-time by simultaneously considering a number of factors such as the location of the customer, the location of the technician, which technicians have the specific skill sets to fix a customer's problem, and the distance the technician will need to travel to get to the job. With this information, a company can consistently ensure that the best technician, with the right skills and tools gets to the customer in the most efficient manner possible.

Green benefits:

Reduced fuel consumption/pollution — Ensuring that you send a technician with the right skill set for the job in the closest proximity to the customer, reduces drive times and eliminates repeat visits, reducing fuel consumption and related pollution.

Reduced paper consumption — In instances where a field organization still relies on paper work orders for appointment scheduling, real-time scheduling software integrated with a mobile computing device, can drastically reduce paper consumption.

Economic benefits:

Operating cost savings — Year over year cost savings as a result of reduced fuel and paper use.

Increased technician productivity — Because field technicians are dispatched more efficiently, they can complete more jobs each day. Also, because field technicians can be dispatched in real-time, they can address customer requests faster, improving customer satisfaction.

Increased first-time fix rates — Ensuring technicians with the appropriate skills are assigned to each job increases first-time fix rates and improves customer satisfaction.

Lower cost per visit — Dispatching technicians more efficiently decreases a field organization's average cost per customer visit.

Case in point:

TOMRA, a provider of equipment and solutions for the recovery of recyclable materials, realized impressive results after implementing real-time scheduling software. The system improved TOMRA's customer response time by 25%; increased the number of machines serviced by technicians on a daily basis by 12%; and reduced the company's fleet mileage by 12% in the first year, with continuing reductions of 5-6% in subsequent years. The efficiency the real-time scheduling system delivered also allowed TOMRA to reduce its field force from 75 to 65 technicians, with no reduction in the number of machines serviced. To read the full story, [click here](#).



Go Green And Save Green With Mobile Field Service

Service Parts Management Software

For many service companies, parts management is a labor-intensive, spreadsheet-driven process that is susceptible to human error. Inefficient parts management can lead to an unbalanced inventory where you have more parts than you need in some areas and not enough in others. As you know, arriving at a customer job without the parts required can be a costly oversight for your organization and an infuriating experience for your customers.

Service parts management software automates many of the most grueling aspects of inventory management and provides you with detailed historical data that enables you to better forecast and plan for your current and future needs. This includes strategic, tactical, and operational recommendations through all phases of the product life cycle.

Green benefits:

Reduced fuel consumption/pollution — Ensuring your technicians are always equipped with the parts they need to complete service calls eliminates wasted trips and repeat visits to the customer site, reducing fuel consumption and related pollution.

Reduced paper consumption — With service parts management software, you can say goodbye to managing and printing multiple spreadsheets for inventory audits, saving countless trees in the process.

Economic benefits:

Reduced planning costs — Service parts management software automates the planning process, so you can proactively plan rather than expedite parts.

Reduced expediting costs — By ensuring technicians always have the parts they need, there is less need to rush parts to customer sites, reducing expediting costs.

Increased first-time fix rates — By optimizing field stock, you increase the likelihood that each technician can complete a customer call on their initial visit.

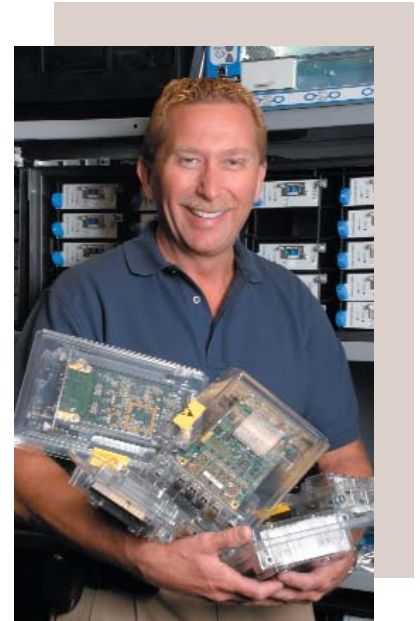
Reduced inventory — Service parts management software can help you optimize your stocking plan,

reducing your inventory levels by as much as 60%. This results in lower procurement expenses, reduced carrying costs, and improved cash flow.

Reduced inventory obsolescence — Service parts management software provides you with increased visibility into the product life cycle, allowing you to proactively remove obsolete parts from your inventory. This practice reduces inventory obsolescence and write-offs.

Case in point:

Historically, Juniper Networks, a provider of enterprise networking and security solutions, manually entered data into Excel spreadsheets to manage the inventory and distribution of its 1,913 parts throughout 250 parts depots. In 2006, the company implemented service parts management software to automate several steps in the inventory management process. Within three months of implementing the new system, Juniper Networks was able to save \$3.5 million by reallocating its existing inventory rather than purchasing new parts. The new solution also increased material availability by 15%, improved on-time delivery by 27%, reduced customer dissatisfaction by 40%, and increased customer satisfaction by 10%. [Click here](#) to read the complete Juniper Networks story.



Rugged Mobile Computers

While each of the previously mentioned technologies offers several business benefits on their own, the capabilities of each can be significantly enhanced

Go Green And Save Green With Mobile Field Service

when integrated directly with mobile computing devices in the field. With a mobile device (e.g. handheld computer, smartphone, laptop, tablet computer, etc.), field technicians can access appointment data or parts information in real-time with no need for paper work orders or dispatch calls.



Technicians can also update headquarters as to the status of a job just as easily using a mobile device. However, since your field technicians are always on the move and often work in harsh

environments, not any mobile device will do. You can significantly improve your green position and your bottom line by investing in rugged mobile computers.

Green benefits:

Reduced waste — Rugged mobile computers are designed with more resilient materials than consumer-grade mobile devices. These materials protect the device from damage associated with drops, vibration, water exposure, and corrosion over time. All of this correlates to longer computer life spans and less waste as a result of part or device replacement.

Energy efficiency — Some rugged mobile devices are built without cooling fans to seal the internal components from exposure to water or dust. This fanless design also reduces the energy required to run the device. Some mobile devices also leverage ultra low voltage processing chips to reduce the amount of power the device consumes.

Economic benefits:

Lower TCO (Total Cost of Ownership) — According to VDC Research, when both hard costs (e.g. hardware and software deployment, education costs, etc.) and soft costs (e.g. productivity loss from hardware failures, internal IT support costs, etc.) are considered, the



average annual TCO of a rugged notebook computer is only \$3,094.22 compared to \$4,850.96 for a non-rugged notebook. Likewise, the annual TCO of a rugged handheld/PDA is only \$2,730.10 compared to \$4,096.34 for a non-rugged handheld/PDA.

Increased technician productivity — Since technicians can download and upload information to the field organization's back end systems in real time using a rugged mobile device, they can be more productive. Technicians no longer have to waste time on hold with the dispatch center or filling out paperwork. Instead, they can get started on the next job.

Case in point:

Austin Energy, a municipally-owned electric utility, historically required techs to complete paper service orders for each call. This was not only an error-prone process, but documents were sometimes lost in transit between the customer locations, the truck, and the home office.

Austin Energy implemented a mobile field service scheduling solution integrated with rugged notebook computers. Rugged devices were necessary to withstand the extreme heat technicians encounter in Texas. With the mobile system in place, technicians could complete service orders on the rugged computer



using a series of drop down menus rather than completing paper work orders. This solution helped Austin Energy reduce its average service turnaround time from seven days to 24 hours. To read the complete Austin Energy story, [click here](#).

Rise Above The Recession With Electronic Document Management

Mobile Printers

In addition to providing your technicians with the ability to send and receive data in real-time using a mobile computer, you can further enhance your green and business efficiency by equipping your field force with mobile printers. When integrated with a mobile computing device and a back end service management application, mobile printers allow your technicians to print receipts, invoices, and labels without being tied to the office or a vehicle. Some mobile printers also feature integrated payment processing features that allow a technician to run a credit card at the point of service as opposed to authorizing credit cards through the dispatch office or transporting personal checks.



Green benefits:

Reduced paper consumption — Most mobile printers are compact units that generate receipts that are only 2-, 3-, or 4-inches wide. These devices consume much less paper than the 8.5-by-11-inch multipart forms some field organizations use for manual invoicing.

Reduced waste — Just like mobile computers, mobile printers are also available in rugged formats. Investing in a rugged device can extend the lifespan of the product and reduce the waste associated with part or device replacement.

Reduced fuel consumption/pollution — Since mobile printers allow technicians to automatically generate invoices on-site and mobile computers allow transaction data to be uploaded electronically to the main office, merchant copies of invoices no longer have to be physically transported back to headquarters. This reduces the



number of trips to headquarters a technician needs to make, which saves fuel.

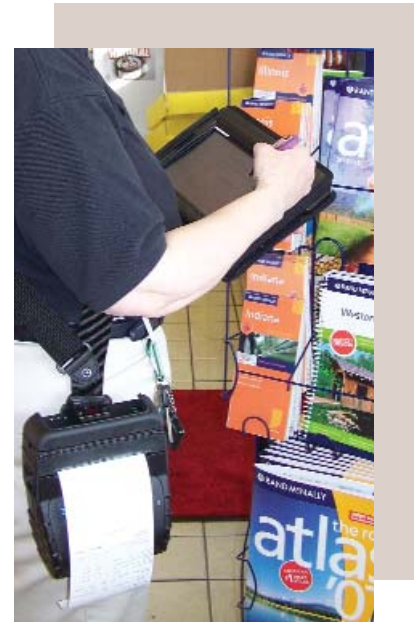
Economic benefits:

Operating cost savings — In addition to year over year cost savings as a result of lower paper and fuel consumption, mobile printers can also help reduce your labor costs. For example, with mobile printers, personnel will no longer need to manually enter data written on paper invoices into the back end system. This process can be automated through the integration of the mobile printer, mobile computer, and back-end software.

Increased technician productivity — By not having to return to a vehicle to print out an invoice or return to headquarters to drop off handwritten invoices, a technician can reduce his job turnaround time and complete more calls per day.

Case in point:

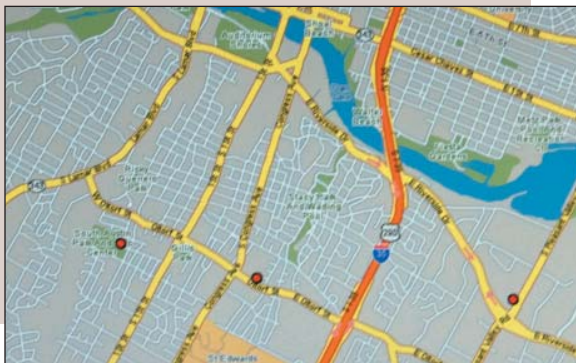
Until recently, Rand McNally — a leading publisher of maps, books, and electronic media for the travel industry — used dot matrix printers tethered in the cab of each vehicle to generate invoice of credit documents for customers. Malfunctions with these devices were common, resulting in substantial employee downtime and equipment repair costs. Rand McNally upgraded to rugged mobile printers in 2007 and has realized substantial cost savings as a result. For example, the mobile printers are saving the company \$57,000 a year in reduced repair costs, \$66,000 a year due to increased technician uptime, and \$9,000 a year in annual paper savings. [Click here](#) to read the full Rand McNally story.



Go Green And Save Green With Mobile Field Service

Fleet Navigation/Tracking

Fleet navigation and tracking technologies such as LBS (location-based services), GPS (global positioning system), GIS (geographic information system), and AVL (automatic vehicle location) are playing a growing role in both the environmental and business initiatives of today's field service organizations. With these solutions, service companies can more accurately determine the real-time location of their field technicians, route their technicians more effectively to job sites, and even monitor the driving habits of each technician and performance of each vehicle.



Green benefits:

Reduced fuel consumption/pollution — By allowing you to optimize technician routes and navigate them to job sites more effectively, fleet navigation and tracking solutions dramatically reduce your annual fuel consumption. These technologies can also help you monitor and control driver habits such as high engine-idle times, further reducing fuel consumption and related pollution.

Economic benefits:

Operating cost savings — Year over year savings on fuel and vehicle maintenance costs.

Reduced drive time — By optimizing routes with fleet navigation and tracking technologies, wasted travel

time can be eliminated and average drive times can be significantly reduced.

Increased technician productivity — With shorter drive times, technicians can complete more calls per day.

Case in point:

Time Warner Cable of Central Texas historically preassigned jobs and service routes to its technicians at the beginning of each day. This system limited the company's ability to effectively dispatch and route technicians in real-time to address customer emergencies. Time Warner implemented a fleet tracking solution consisting of an in-vehicle GPS module and supporting application software to remedy this issue. Not only did the GPS system provide Time Warner with the real-time location information to address customer requests faster, it also alerted the company to the fact that several technicians let their engines idle excessively. With this knowledge, Time Warner put steps in place to cut engine-idle times by more than 25%, saving the company tens of thousands of dollars in fuel each month. To read the complete Time Warner story, [click here](#).



Remote Monitoring

Even better than optimizing a technician's route to a job site is eliminating the need for an onsite visit altogether. This can be accomplished through many of today's remote monitoring software platforms. This technology can allow service

Go Green And Save Green With Mobile Field Service

organizations to proactively monitor and service their products remotely. With this insight, service companies can often discover, diagnose, and resolve equipment problems without ever dispatching a technician — before these issues ever disrupt the customer's operations.

Green benefits:

Reduced fuel consumption/pollution — The ability to diagnose and service problems remotely reduces the number of onsite visits your field force needs to make, significantly reducing fuel consumption. By keeping your vehicles off the road, you also help reduce traffic congestion and related pollution.

Economic benefits:

Operating cost savings — Year over year savings on fuel and vehicle maintenance costs. Also, by limiting the number of onsite service calls you are forced to make, you reduce the number of field technicians required, cutting your labor costs. *Improved customer satisfaction* — By addressing equipment problems remotely before a customer is even aware there is an issue, customer satisfaction is improved and customer retention rates increase.

Case in point:

Allscripts, a provider of software solutions for healthcare professionals, implemented remote monitoring software to detect and stop problems before onsite assistance was required. As a result, the company reduced support incidents by 25% and dramatically lowered deployment and installation times for software service updates. [Click here](#)

to read the full Allscripts case study.

Conclusion

With the current state of the economy, few technology deployments will be approved based on their green merits alone. Upper management generally perceives green initiatives as expensive undertakings that offer limited payback for an organization outside of elevating its environmental friendliness. However, as illustrated by this white paper, green benefits and economic benefits often go hand-in-hand. This is particularly the case for many of today's most popular mobile field service technologies. If you're currently seeking approval for a field force technology deployment, make sure you spell out both the green and bottom-line benefits of the installation. With tangible ROI figures to support you, it's possible to gain the approval you seek — even in this tough economy.



About The Author



Ken Congdon is the editor in chief of *Integrated Solutions Magazine* produced by Jameson Publishing, Inc. (Erie, PA). *Integrated Solutions* is a publication dedicated to showing IT end users how to enhance their business performance by implementing wireless, mobility, RFID (radio frequency identification), and ECM technologies. As editor in chief, Congdon is responsible for developing the content of the monthly magazine. He also personally writes many of the feature stories, case studies, and technology trends articles that appear in the publication.

Go Green And Save Green With Mobile Field Service

About The Sponsors



Astea International (NASDAQ: ATEA) is a global provider of software solutions that offer all the cornerstones of service lifecycle management, including customer management, service management, asset management, reverse logistics management and mobile workforce management. Astea's solutions link processes, people, parts, and data to empower your team and provide the agility you need to achieve sustainable value in less time, and successfully compete in a global economy. Since 1979, Astea has been helping more than 400 companies achieve new levels of service excellence. For more information, visit the company's website at www.astea.com.



Brother Mobile Solutions, Inc. manufactures and sells mobility products in support of the mobile workforce. The products include the MPrint family of ultra-portable (wearable/luggable) printers, the PocketJet mobile (luggable/in-vehicle) printers, and the DSmobile 600 scanner. We strive to provide products that are reliable and user friendly in a mobile environment. For more information, visit the company's website at www.brother.com.



Datalogic Mobile is a global manufacturer of mobile computers for warehousing, field-force automation, and retail applications. Our diverse product range includes pocket-sized mobile computers, pistol grip computers, and industrial PDAs. We have strong worldwide presence with offices in over 20 countries and over 800 business partners worldwide. See us on the web at www.mobile.datalogic.com/americas.



datamax•oneil

Datamax-O'Neil, manufacturer of the most reliable portable printers, offers a complete line of thermal and dot matrix impact printers for bar code, labeling, ticketing, and receipt applications. Datamax-O'Neil portable printers are used throughout a variety of industries, including retail, manufacturing, law enforcement, utilities, transportation, distribution, and an extensive range of business services. Applications include route accounting, direct store delivery, field service, and retail. For more information, visit the company's website at www.datamax-oneil.com.



ARMOR fully rugged mobile computers from DRS Technologies combine advanced computing and communications technology with MIL-STD-810F durability. The ARMOR C12 Rugged Convertible Notebook and the ARMOR X10 Rugged Tablet PC offer Intel processing technology, advanced data protection, "anywhere" connectivity, and sunlight readable displays. Based on 25 years of experience developing military computer systems that survive in the harshest environments, these computers are widely used in public safety, transportation, field service, heavy industry, and government agencies. For more information, visit the company's website at www.drarmor.com.



Make your fleet and mobile workforce more efficient by building routes and schedules that reduce fuel consumption, labor hours, and vehicle use. With ArcLogistics from ESRI you can scope and plan your operations and grow your business with the resources you already have. For more information, visit the company's website at www.esri.com.



Battery packs are the "engines" that drive thousands of different portable devices, in virtually every facet of business, security, transportation, and the military. However, power limitations are a very serious problem for manufacturers of portable devices. Honeywell Batteries acts as a conduit for commercialization of the latest battery technology developments and the competitive advantages that come from this. Honeywell Batteries is a recognized leader in the design, development and manufacture of battery packs, chargers, and power management technology for portable devices. For more information, visit the company's website at www.honeywellbatteries.com.



myServiceForce develops service automation solutions that leverage the Internet and wireless technology. In combination with 'best of breed' business management software, we enable service companies to improve productivity, reduce operating costs, increase revenue and enhance customer service by eliminating manual, paper-based business processes, and creating real time, onsite transactions. For more information, visit the company's website at www.myserviceforce.com.



For 30 years, Printek has been a global leader of innovative business printing solutions, both ruggedized mobile and high-speed dot matrix. All Printek printers are designed to withstand challenging work environments and are backed by unparalleled support and comprehensive warranties. PrintekMobile, the Printek line of direct thermal mobile printers, offers a full line of receipt and label printers for 2-, 3-, and 4-inch applications, including route accounting, field service, public safety, healthcare, distribution, transportation, retail, and warehousing. PrintekMobile printers contain popular emulations for easy, true, drop-in replacement. Call 1(800) 368-4636 to learn how to order a FREE 30-day Test Drive Printek Printer. For more information, visit the company's website at www.printekmobile.com.



Psion Teklogix is a global provider of solutions for mobile computing and wireless data collection. The company's fully integrated mobile computing solutions include rugged handheld and vehicle-mounted computers, secure wireless networks, robust software, professional services, and exceptional support programs. For more information, visit the company's website at www.pSIONteklogix.com.



Sprint Nextel offers a comprehensive range of wireless and wireline communications services bringing the freedom of mobility to consumers, businesses and government users. Sprint Nextel is widely recognized for developing, engineering and deploying innovative technologies, including two wireless networks serving more than 49 million customers at the end of the first quarter of 2009; industry-leading mobile data services; instant national and international push-to-talk capabilities; and a global Tier 1 Internet backbone. For more information, visit the company's website at www.sprint.com/fieldservices.



The TOSHIBA TEC B-SP2D is a compact portable thermal printer with features that provide maximum flexibility. You can easily produce labels, tags, or receipts using Bluetooth, IrDA, and RS-232 communications. Take your portable printer on the road by simply clipping it to your belt for easy hands-free operation. The B-SP2D fits in the palm of your hand (height:91mm, width:114 mm, depth:44 mm) and weighs about .84 lb.(380 g). The B-SP2D is ideal for warehousing/delivery control systems, price labels, discount labels, shelf-edge labels, bills, inventory lists, and printing various tickets. For more information, visit the company's website at www.toshibatecusa.com.